



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/587,658

05/31/2007

Rolf Muller

016906-0539

9716

22428 7590 03/09/2009  
FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

TRIEU, THAI BA

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

03/09/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,658	<b>Applicant(s)</b> MULLER ET AL.	
	<b>Examiner</b> Thai-Ba Trieu	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/28/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

The Preliminary Amendment filed on July 28, 2006 is acknowledged.

Claims 1-13 were amended.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ***“throttle member comprising an expansion element”*** (See Claim 9) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure

Art Unit: 3748

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

1. Applicant discloses "The invention relates to an arrangement for cooling exhaust gas and charge air in a motor vehicle with a turbocharger ***according to the preamble of claim 1*** and to a method of cooling exhaust gas and charge air ***according to the preamble of claim 11***" (Page 1, lines 5-9); and

"This object is achieved by an arrangement ***having the features of claim 1***" (See Page 2, lines 34-35).

However, claims may be amended or cancelled during the prosecution of the instant application, and therefore, is not an appropriate characterization of the invention.

2. In the specification, page 7, line 38, ***“two exhaust gas coolers 11, 12”*** should be replaced by -- **two exhaust gas recirculation coolers 11, 12** – (*for incorporating with drawings*).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

In claim 9, the recitation of ***“throttle member comprising an expansion element”*** renders the claim indefinite, since it is not clear that which part/portion/component is to be considered as an expansion element of the throttle member? Applicants are required to identify this expansion part/portion/component.

For the purpose of this Office Action, the claim 9 will be examined as best understood by the examiner.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 1-8 and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomaselli et al. (pub. Number WO 2004/044402 A1).***

**Regarding claims 1-8 and 10**, Tomaselli discloses an arrangement (30) for cooling recirculated exhaust gas (via 26) and charge air (12) in a motor vehicle with a turbocharger (16, 18), comprising at least one heat exchanger for the exhaust gas stream (30B) and one heat exchanger for the charge air stream (30A), characterized in that at least one heat exchanger for the exhaust gas stream and one heat exchanger for the charge air stream are part of a common low temperature coolant circuit (50B, 42, 44, 34/32, 50A, 50C, 46, 48) (See Figures 1-7);

wherein the two heat exchangers (30A, 30B) are connected in parallel in the low temperature coolant circuit (50B, 42, 44, 34/32, 50A, 50C, 46, 48) (See Figures 1-7);

wherein a pump (44) is arranged in the low temperature coolant circuit (50B, 42, 44, 34/32, 50A, 50C, 46, 48) (See Figures 1-7);

wherein the pump (44) is controllable or switchable (See Page 9, lines 1-4 and 17-20);

wherein the pump (44) is arranged upstream of the branch-off of the low temperature coolant circuit (50B, 42, 44, 34/32, 50A, 50C, 46, 48) (See Figures 1-7);

wherein part of the low temperature coolant circuit (50B, 42, 44, 34/32, 50A, 50C, 46, 48) is an air-cooled low temperature coolant radiator (48) (See Figures 1-7);

wherein a throttle member (50, 50A, 50B, 50C) for controlling the coolant stream in the low temperature coolant circuit (50B, 42, 44, 34/32, 50A, 50C, 46, 48) is arranged

Art Unit: 3748

in one of the two parallel-connected regions of the low temperature coolant circuit (50B, 42, 44, , 34/32, 50A, 50C, 46, 48) (See Figures 1-7);

wherein the throttle member (50, 50A, 50B, 50C) is a controllable throttle valve (See Figures 1-7, Page 8, lines 4-8);

wherein the throttle member (50, 50A, 50B, 50C) is arranged at the coolant outlet of the charge air cooler (30A) (See Figures 1-7).

**Regarding claim 11**, the method as claimed would be inherent during the normal use and operation of Tomaselli device as disclosed in the rejection of claim 1 set forth above.

***Claims 1, 3, 4, 6, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuda et al. (Pub. Number EP 1 059 432 A2 or US Patent Number 6,321,697 B1).***

**Regarding claims 1, 3, 4, and 6**, Matsuda discloses an arrangement for cooling recirculated exhaust gas (EGR) and charge air (via 104) in a motor vehicle with a turbocharger (100), comprising at least one heat exchanger (50a) for the exhaust gas stream and one heat exchanger (50b) for the charge air stream, characterized in that at least one heat exchanger for the exhaust gas stream and one heat exchanger for the charge air stream are part of a common low temperature coolant circuit (105) (See Figure 2, Paragraphs [0018]-[0021] of '432 A2 or Column 2, lines 66-67, Column 3, lines 1-49 of '697 B2);

Art Unit: 3748

wherein a pump (53) is arranged in the low temperature coolant circuit (105);

wherein the pump (53) is controllable or switchable (See Abstract, Column 3, lines 19-29);

wherein part of the low temperature coolant circuit (105) is an air-cooled low temperature coolant radiator (via 9) (See Figure 2).

**Regarding claim 11**, the method as claimed would be inherent during the normal use and operation of Matsuda device as disclosed in the rejection of claim 1 set forth above.

***Claims 1-8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Guerrero (Pub. Number WO 03/069149 A1 or US 2005/0034712 A1).***

**Regarding claims 1-8**, Guerrero discloses an arrangement for cooling recirculated exhaust gas (via 18) and charge air (via 15) in a motor vehicle with a turbocharger (6), comprising at least one heat exchanger (16, 42) for the exhaust gas stream and one heat exchanger (14, 40) for the charge air stream, characterized in that at least one heat exchanger for the exhaust gas stream (16, 42) and one heat exchanger for the charge air stream (14, 40) are part of a common low temperature coolant circuit(water) (See Figures 2, 7-10);

wherein the two heat exchangers (14, 16; 40, 42) are connected in parallel in the low temperature coolant circuit (water) (See Figures 2, 7-10);



Art Unit: 3748

wherein a pump (60) is arranged in the low temperature coolant circuit (via loop 56);

wherein the pump (60) is controllable or switchable (See Page 11, lines 19-27 of '149 A1 Paragraph [0044] of '712 A1);

wherein the pump (60) is arranged upstream of the branch-off of the low temperature coolant circuit (via loop 56) (See Figures 8-10);

wherein part of the low temperature coolant circuit (via 56) is an air-cooled low temperature coolant radiator (78) (See Figures 8-11);

wherein a throttle member (72) for controlling the coolant stream in the low temperature coolant circuit (via 56) is arranged in one of the two parallel-connected regions of the low temperature coolant circuit (via 56);

wherein the throttle member (72) is a controllable throttle valve (See Page 11, lines 2-36, and Page 12, lines 1-9 of '149 A1 and Paragraph [0045] of '712 A1); and

wherein the throttle member (72) is arranged at the coolant outlet of the charge air cooler (14, 40) (See Figures 2 and 6-7).

**Regarding claim 11**, the method as claimed would be inherent during the normal use and operation of Guerrero device as disclosed in the rejection of claim 1 set forth above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claim 9 is rejected under 35 U.S.C. 103(a) as best understood as being unpatentable over any of Tomaselli et al. (pub. Number WO 2004/044402 A1), Matsuda et al. (Pub. Number EP 1 059 432 A2 or US Patent Number 6,321,697 B1), and Guerrero (Pub. Number WO 03/069149 A1 or US 2005/0034712 A1), in view of either Muschalik (Patent Number 4,836,163), or Boiarski et al. (Patent Number 5,595,065)***

Tomaselli/Matsuda/Guerrero discloses the invention as recited above; however, Tomaselli/Matsuda/Guerrero fails to disclose the throttle member comprising an expansion element.

Muschalik/Boiarski teaches that it is conventional in the throttle valve art, to utilize the throttle member having an expansion element (5 of Muschalik; 28 of Boiarski) (See Figures 1-4, Column 1, lines 45-67, Column 2, lines 1-26 and 61-68, and Column 3, lines 1-32; Column 7, lines 55-58 of Boiarski).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the throttle member comprising an expansion element, as taught by Muschalik/Boiarski, to improve the efficiency of Tomaselli/Matsuda/Guerrero device, since the use thereof would have provided a

Art Unit: 3748

throttle member with a desired manner due to the deformation of the expansion member upon the throttle swinging movement, and with high coefficient of thermal expansion.

***Claims 12-13 are rejected under 35 U.S.C. 103(a) as best understood as being unpatentable over any of Tomaselli et al. (pub. Number WO 2004/044402 A1), Matsuda et al. (Pub. Number EP 1 059 432 A2 or US Patent Number 6,321,697 B1), and Guerrero (Pub. Number WO 03/069149 A1 or US 2005/0034712 A1), in view of design choice.***

Tomaselli/Matsuda/Guerrero discloses the invention as recited above; however, Tomaselli/Matsuda/Guerrero fails to disclose more than 50% of the coolant being fed to the exhaust gas cooler (AGK) at low and medium engine loads and speeds; and more than 50% of the coolant being fed to the charge air cooler (LLK) at high engine loads and speeds, in particular in the full load range.

One having an ordinary skill in the art of cooling system for turbocharged internal combustion engines having an EGR system, would have found more than 50% of the coolant being fed to the exhaust gas cooler (AGK) at low and medium engine loads and speeds; and more than 50% of the coolant being fed to the charge air cooler (LLK) at high engine loads and speeds, in particular in the full load range, as a matter of design choice depending on the engine operation requirements. Moreover, there is nothing in the record which establishes that the claimed percentage of the coolant flow to the exhaust gas cooler and to the charge air cooler, presents a novel or unexpected result (See *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

***Prior Art***

The IDS (PTO-1449) filed on July 28, 2006 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number: 10/587,658

Page 12

Art Unit: 3748

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB  
January 30, 2009

/Thai-Ba Trieu/  
Primary Examiner  
Art Unit 3748